

Inventory Management: A Case Study In Ultratech Cement

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ABSTRACT

Stock or stock is the merchandise and materials that a business holds for a definitive objectives to have a motivation behind resale (or repair). Inventory administration is a teach principally about indicating the shape and situation of loaded products. It is required at various areas inside an office or inside numerous areas of a supply system to go before the standard and arranged course of creation and load of materials. Stock constitutes the hugest piece of current resources of bigger greater part of Indian glass fabricating enterprises. The primary destinations to know the money related execution on stock administration. The examination utilized Economic Order Quantity (EOQ) model and chi-square technique. Thus, proposals on the correct amount, quality and timing of material and no more good cost finish up the examination consider.

Keywords: inventory, economic order levels, demand, materials, sales and production.

1. INTRODUCTION

Stock administration is principally about indicating the size and position of supplied products. Stock administration is repeated at various areas inside an office or inside numerous areas of a supply or system to secure the consistent and arranged course of creation against the arbitrary unsettling influence of coming up short on materials or products. The extent of Inventory administration likewise concerns the scarce differences between recharging lead time, conveying expenses of stock, resource administration, Inventory gauging, physical stock, accessible physical space for Inventory, quality administration, returns and deficient products and request and estimating. Stock credit alludes to the utilization of stock, or stock, as guarantee to raise fund. Where banks might be hesitant to acknowledge conventional guarantee, for instance in creating nations where arrive title might need, stock credit is a possibly imperative method for beating financing requirements. This is not another idea; archeological confirmation proposes that it was polished in Ancient Rome. Getting fund against loads of an extensive variety of items held in a fortified stockroom is basic in a great part of the world. It is, for instance, utilized with Parmesan cheddar in Italy. Stock credit on the premise of put away agrarian create is broadly utilized as a part of Latin American nations and in some Asian

Nations. A precondition for such credit is that banks must be certain that the put away item will be accessible on the off chance that they have to approach the insurance; this suggests the presence of a dependable system of affirmed distribution centers. Banks additionally confront issues in esteeming the stock. The manufacturing inventory has been subdivided into three types. These,

1. Raw materials,
2. Work in process,
3. Finished goods.

- **Raw materials:** Everything the crafter buys to make the product is classified as raw materials. That includes leather, dyes, snaps and grommets. The raw material inventory only includes items that have not yet been put into the production process.

- **Work in process:** This includes all the leather raw materials that are in various stages of development. For the leather crafting business, it would include leather pieces cut and in the process of being sewn together and the leather belts and purse etc. that are partially constructed.

In addition to the raw materials, the work in process inventory includes the cost of the labor directly doing the work and manufacturing overhead. Manufacturing overhead is a catchall phrase for any other expenses the leather crafting business has that indirectly relate to making the products. A good example is depreciation of leather making fixed assets.

- **Finished goods:** When the leather items are completely ready to sell at craft shows or other venues, they are finished goods. The completed merchandise stock likewise comprises of the cost of crude materials, work and assembling overhead, now for the whole item.

OBJECTIVES OF THE STUDY

- To study the inventory management practices of the ultra tech cement
- To analyze the impact of inventory management practice on liquidity and profitability of Ultra tech cement

2. REVIEW OF LITERATURE:

Bern at de William (2008) the study tells that the primary concentrate of stock administration is in transportation and warehousing. The choice taken by administration relies on upon the conventional

technique for stock control models. The customary technique for stock administration is how much valuable in nowadays the creator tells about it he is likewise saying that the conventional strategy is not a cost lessening. It is so much costly. In any case, the dealing with the stock is most vital work for any assembling unit.

Delaunay C, Sahin E (2007) His review explains a bunch of work has been done yet now on the off chance that we need to proceed we should have great permeability upon this field of research. That is the reason we are centered around casing work for a comprehensive survey on the issue of production network administration with stock errors. The creator said that their point in this work is additionally to introduce an essential basis that permits a qualification between the distinctive kind of dealing with the stock.

Asfaque Ahmed (October 12, 2004) He said that the vast majority of the assembling organization sellers have arranging and planning item which expect either endless generation limit with regards to computing amounts of crude material and work in advance prerequisites or unending amounts of crude material and WIP material for ascertaining creation limit. There are numerous issues with this approach and how to maintain a strategic distance from these by ensuring that the item you are purchasing surely considers limited amounts of required materials and in addition limited limits of work focuses in your assembling offices.

Silver, Edward A (dec22, 2002) his research makes an attempt in setting of a mainstream of things for which the supposition fundamental the EOQ determination holds sensibly well. However as is as often as possible the trade out practices there is a total requirement are the presence of spending plan to be designated among the supply of the things and A buying generation office having the ability to handle at most a specific number of recharging every year. In view of the requirement, the individual renewal amounts can't be chosen freely.

3. RESEARCH HYPOTHESIS

The following hypothesis was tested in this research work.

H0: ULTRATECH CEMENT manufacturing industry does not make use of economic order quantity [EOQ] optimization model to evaluate their inventory.

H1: ULTRATECH CEMENT manufacturing industry makes use of economic order quantity [EOQ] optimization model to evaluate their inventory

4. RESEARCH METHODOLOGY

This study was conducted by using primary and secondary data with the time period of 5 years (2013-2017). The sources of data includes personal

interview with the key personnel in the stores, purchase, production and inventory department of the company. The record analysis was obtained from the annual reports, schedules, store, ledgers, budgets and purchase orders. The best known and most fundamental inventory decision model EOQ and chi-square test is taken for the analysis.

5. DATA ANALYSIS & HYPOTHESIS TESTING

The data in table 1, 2, 3 show the usage rate of ULTRATECH CEMENT Company's raw material (clay ash, lime stone and bauxite). The data were used the economic order quantity (EOQ) formula. The expected frequency was determined at 5% confidence level and 4 degree of freedom, see table 1, 2 & 3.

CALCULATION OF EOQ:

Clay Ash:

Year	Total Demand	ordering cost	carrying cost		EOQ
2013	14000	42	2	588000	766.8115
2014	16500	55	1.55	117096.7	1082.11
2015	15000	38	1.75	651428.57	807.11
2016	14000	40	1.5	746667	864.098
2017	12000	38	3	304000	551.36

Lime Stone

Year	Total Demand	ordering cost	carrying cost		EOQ
2013	15000	40	1.25	960000	979.795
2014	13500	41	2	553500	743.975
2015	13500	36	1.5	648000	804.98
2016	12500	37	1.75	528571.42	727.029
2017	13500	35	1.25	756000	869.482

Bauxite

Year	Total Demand	ordering cost	carrying cost		EOQ
2013	11500	36.5	1.5	559667	748.108
2014	11000	37	2.5	325600	570.6
2015	11200	36.5	1.7	467200	683.52

2016	17000	37	1	1258000	1121.60
2017	18000	39	2.57	510545.45	714.52

quantity (EOQ) optimization model to evaluate their inventory using lime stone as parameter for measurement

CALCULATION OF Chi-Square test

Table1: Clay Ash

YEARS	0 (EOQ)	E	(O-E) ²	(O-E) ² /E
2013	767	814.8	2285	2.8043
2014	1082	814.8	71396	87.6239
2015	807	814.8	61	0.0748
2016	867	814.8	2421	2.9712
2017	551	814.8	69590	85.4074

$X^2 = 178.8816$

INTERPRATION:

Using Clay ash as parameter, table 1 depicts the X^2 calculated value of 178.8816 which of course is the lower when compared with table value of chi-square (X^2) of 9.488. The null hypothesis was thus accepted ultratech cement company does not make use of economic order quantity (EOQ) optimization using soda ash component as a parameter for measurement.

Table 2: Lime Stone

YEARS	0 (EOQ)	E	(O-E) ²	(O-E) ² /E
2013	980	814.8	27291	33.4941
2014	744	814.8	5013	6.1524
2015	805	814.8	96	0.1178
2016	727	814.8	7709	9.4612
2017	869	814.8	54	0.0662

$X^2 = 49.2917$

INTERPRETATION:

Using lime stone as parameter, table2, depicts the X^2 calculated value 49.2917 which of the course is lower when compared with table value of chi-square (X^2) of 9.488. Company does not make use of economic order

Table 3: Bauxite

YEARS	0 (EOQ)	E	(O-E) ²	(O-E) ² /E
2013	748	814.8	4462	5.4761
2014	571	814.8	59438	72.9479
2015	684	814.8	17109	20.9977
2016	1121	814.8	93758	115.0687
2017	715	814.8	9960	12.2238

$X^2 = 226.7142$

INTERPRETATION:

Using Bauxite as parameter, table 3 depicts the X^2 calculated value of 226.7142 which of course is the lower when compared with table value of chi-square (X^2) of 9.488. The null hypothesis was thus accepted ultratech cement company does not make use to evaluate their inventory using bauxite as parameter for measurement.

FINDINGS & RECOMMENDATION:

The findings as presented above in all the three cases show that we should reject the alternative hypothesis and accept the null hypothesis. The study analysis shows that the company operates a policy of making order on quarterly basis within a period of one year provided, every one week stock has to be verified and inform to the store department. The study observed that the company adopts the EOQ model in placing order for its raw materials. It also observes that there is a positive correlation between sales and inventory usages. The study concludes that inventory usage depends on sales which means when sales increases, inventory usages should increase.

Therefore, inventory management is a must for the continuity and survival of any goal focused manufacturing organization.

First, the material will be ordered by reaching the minimum stock level, material management unit should also pay attention to sales growth over the years.

Secondly, in the analysis we also mentioned that there was a negative relationship between the inventory and sales and inventory cost and production cost. This

implies that inventory automatically determines production cost or sales and vice-versa.

Lastly, emphasis should be normally placed on the economic order quantity model because it was seen to be in the best interest of manufacturing companies to maintain an optimal level of materials in store, the level that minimizes total cost of investment in inventory.

6. CONCLUSION:

The inventory management technique is more useful to determine the optimum level of inventory and finding answers to problem of safety stock and lead time. Inventory management is an important activity in manufacturing concern. And since the production of glass involves different raw materials like clay ash, bauxite and lime stone etc. The results of the analysis show that the efforts to increase efficiency of inventory used must be directed towards several directions: speeding inventory rotation because by shortening its stationing period within the economic cycle it transforms rapidly into money; increasing turnover to the level demanded by the market; improving the whole trading system for products; reducing specific consumptions, etc.

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